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EXAMINER	
BUTLER, PATRICK	
ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/063,830	Applicant(s) GOLDMAN ET AL.	
	Examiner Patrick Butler	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 05 April 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-6,8-10,12-16 and 21-25 is/are pending in the application.

4a) Of the above claim(s) 9,10,13 and 16 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6, 8, 12, 14, 15, and 21-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 February 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The Applicant's Amendments and Accompanying Remarks, filed 05 April 2006, have been entered and have been carefully considered. No claims are new, no claims are amended, no claims are canceled, and Claims 1-6, 8, 12, 14, 15, and 21-25 are pending.

Although Applicant discusses canceling claim 25 in the Remarks filed 05 April 2006, the Claims filed 05 April 2006 do not reflect any new cancellation. The Examiner withdraws the previously set forth 35 USC § 101 and § 112 rejections of Claim 25 as detailed in the Claim Rejections - 35 USC § 112/35 U.S.C. § 101 section of the Office Action dated 04 November 2005.

Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,643,857 (Cousin et al.) in view of U.S. Patent No. 5,922,255 (McLeod). Additional evidence is provided by Brydson (*Plastics Materials*, page 74).

Note: The suggested use of the method to make a window frame as mentioned in the preamble is treated as an intended used only as there are no steps in the method such as installing glass or a pane material. Therefore, the recitation "window frame" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Claims 1-5

Cousin et al. teach a method of forming a racket frame including forming an elongate element (a preformed thermoplastic polymer extrusion; providing said preformed thermoplastic polymer extrusion) by extruding a mixture of a thermoplastic material and carbon fibers; allowing the elongate element to cool and solidify; introducing (filling) a polyurethane foam (polymer foam; polyisocyanate-based; polyurethane foam; said polyurethane foam is rigid closed-cell foam, semi-rigid closed-cell/open-cell foam or flexible open-cell foam; a support foam formed within said cavity) into cavities (at least one cavity) in the elongate element; heating the elongate element with the polyurethane foam therein to its softening temperature (a first temperature; said first temperature is the heat deflection temperature of the preformed polymer extrusion) by immersing the elongate element in a thermostat-controlled bath for example of

silicone oil; bending the softened elongate element (said heated extrusion) as it is internally supported to prevent crushing by the polyurethane foam around a core (on a curved mandrill) to form a racket frame; and cooling the racket frame (extrusion) below its softening temperature (a second temperature) to set it into the shape of the racket frame (a curved polymer extrusion) (abstract; column 3, line 65 - column 4, line 2; column 4, line 42 - column 5, line 2; column 5, lines 63-66). Note that, although Cousin et al. do not specifically teach that the polymer foam is cured within the cavities, one of ordinary skill in the art would have obviously recognized that the urethane foam must obviously be cured to be capable of supporting the elongate element to prevent crushing. Note further that, although Cousin et al. do not specifically teach that the racket frame is removed from the core after cooling, one of ordinary skill in the art would have obviously recognized that the racket frame must obviously be removed from the core to allow the formed racket to serve its intended purpose.

Cousin et al. do not specifically teach that the thermoplastic material may include a vinyl polymer. However, McLeod teaches a method of manufacturing a racket frame including molding a racket frame out of a fiber reinforced thermoplastic resin material including long fibers and a flowable thermoplastic matrix material such as polyvinyl chloride (vinyl polymer) (column 4, line 36-50). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use polyvinyl chloride as the thermoplastic matrix material for the carbon fibers in the process of Cousin et al. as taught by McLeod to provide a racket frame made from a low-cost yet strong material as taught by McLeod.

Cousin et al. do not specifically teach that the polyurethane foam has a density of about 16 kg per cubic meter to about 320 kg per cubic meter. However, Cousin et al. further teach the cavities are filled with a polyurethane foam whose density is chosen in dependence on the final weight the racket is to have (column 3, line 65 - column 4, line 2). Particularly, the density of the foam is manipulated to achieve the target weight and desired characteristics (see col. 6, lines 10-19). The examiner does not find any limitation to only having 0.9 (specific gravity) density; therefore the density of the racket is not limited to any particular example. Assuming arguendo that 0.9 is the target average density (as cited by Cousin et al., col. 3, lines 61-65), and that the non-foam portion of the racket frame is made of vinyl polymers with 1.4 specific gravity ((*Plastics Materials*, page 74), then the foam would necessarily have significantly less than the target average density (significantly less than 0.9 specific gravity = 900 kg/m^3) in order for the frame to attain the target average density. As the space provided for the foam is variable based on space occupied by the polymer frame of the racket, then instances where a majority of the frame is occupied by non-foam polymer would require that the foam dramatically lower its density (significantly less than 0.9 specific gravity = 900 kg/m^3) in order to achieve the target average density. Given this interaction of the variables and Cousin's teachings of density manipulation for the foam, one of ordinary skill in the art would have liberal latitude to optimize the foam density. Since Cousin et al. recognize that the density of the foam is chosen based upon the desired weight of the racket, Cousin et al. recognize that the density of the foam is a result-effective. As such, one of ordinary skill in the art would have obviously determined the optimum

density of the foam in the process of Cousin et al. through routine experimentation based upon the desired final weight of the racket, the racket construction, density, etc.

Claims 6, 8, 14, 15, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,643,857 (Cousin et al.) in view of U.S. Patent No. 5,922,255 (McLeod) and U.S. Patent No. 4,525,319 (Kaspe).

Claim 6

The discussion of Cousin et al. and McLeod as applied to claim 1 above applies herein.

Cousin et al. do not specifically teach that the second temperature is at least about 10 degrees Celsius less than the heat deflection temperature (e.g., the softening temperature) of the elongate element. However, Kaspe teaches a method for forming a single flange pipe adapter including softening the end portion of a resin pipe, bending the outer extremities of the heated end portion to cause the heated end portion to be flared outwardly, and cooling the outwardly flared end portion to set it in its final configuration wherein the temperature and the timing of the heating and cooling vary depending on the nature and/or thickness of the thermoplastic resin used (column 1, line 47 - column 2, line 2; column 3, lines 33-39 and 48-61). Although Kaspe does not teach the specifically claimed cooling temperature, Kaspe obviously recognizes that the temperature and the timing of heating and cooling are result-effective variable based upon the nature of the thermoplastic resin used in bending processes for thermoplastic materials. As such, in view of the teachings of Kaspe, one of ordinary skill in the art would have obviously determined the optimum temperature and timing of heating and

cooling in the process of Cousin et al. in view of McLeod through routine experimentation based upon the composition, thickness and nature of the thermoplastic material used for the racket frame.

Claim 8

The discussion of Cousin et al. and McLeod as applied to claim 1 above applies herein.

Although Cousin et al. teach that the elongate element can be heated by a bath of desired temperature, Cousin et al. do not specifically teach that the bath may be a glycol bath. Kaspe further teach that heating in a glycol bath or other baths such as oil baths have been suitable for heating the end portion of the pipe (said extrusion is heated to said first temperature in a glycol bath). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use a glycol bath in the process of Cousin et al. in view of McLeod instead of the silicone oil bath as taught by Kaspe to provide a cheaper and more efficient heating medium for the bath in the process of Cousin et al. in view of McLeod.

Claim 14

Cousin et al. teach a method of forming a racket frame including forming an elongate element (a preformed extrusion; providing said preformed extrusion) by extruding a mixture of a thermoplastic material and carbon fibers; allowing the elongate element to cool and solidify; introducing (filling) a polyurethane foam into cavities (at least one cavity) in the elongate element; heating the elongate element with the

polyurethane foam therein to its softening temperature by immersing the elongate element in a thermostat-controlled bath for example of silicone oil; bending the softened elongate element (heated extrusion) as it is internally supported to prevent crushing by the polyurethane foam around a core (on a curved mandrill) to form a racket frame; and cooling the racket frame (extrusion) below its softening temperature to set it into the shape of the racket frame (a curved polymer extrusion) (abstract; column 3, line 65 - column 4, line 2; column 4, line 42 - column 5, line 2; column 5, lines 63-66). Note that, although Cousin et al. do not specifically teach that the urethane foam is cured within the cavities, one of ordinary skill in the art would have obviously recognized that the urethane foam must obviously be cured to be capable of supporting the elongate element to prevent crushing. Note further that, although Cousin et al. do not specifically teach that the racket frame is removed from the core after cooling, one of ordinary skill in the art would have obviously recognized that the racket frame must obviously be removed from the core to allow the formed racket to serve its intended purpose.

Cousin et al. do not specifically teach that the preformed extrusion may include vinyl polymer thermoplastic. However, McLeod teaches a method of manufacturing a racket frame including molding a racket frame out of a fiber reinforced thermoplastic resin material including long fibers and a flowable thermoplastic matrix material such as polyvinyl chloride (vinyl polymer thermoplastic) (column 4, line 36-50). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use polyvinyl chloride as the thermoplastic matrix material for the carbon fibers in the process of Cousin et al. as

taught by McLeod to provide a racket frame made from a low-cost yet strong material as taught by McLeod.

Cousin et al. in view of McLeod do not specifically teach that heating the extrusion to about 70 degrees Celsius and cooling the extrusion to a temperature less than about 60 degrees Celsius. However, Kaspe teaches a method for forming a single flange pipe adapter including softening the end portion of a resin pipe, bending the outer extremities of the heated end portion to cause the heated end portion to be flared outwardly, and cooling the outwardly flared end portion to set it in its final configuration wherein the temperature and the timing of the heating and cooling vary depending on the nature and/or thickness of the thermoplastic resin used (column 1, line 47 - column 2, line 2; column 3, lines 33-39 and 48-61). Although Kaspe does not teach the specifically claimed heating and cooling temperatures, Kaspe obviously recognizes that the temperature and the timing of heating and cooling are result-effective variable based upon the nature of the thermoplastic resin used in bending processes for thermoplastic materials. As such, in view of the teachings of Kaspe, one of ordinary skill in the art would have obviously determined the optimum temperature and timing of heating and cooling in the process of Cousin et al. in view of McLeod through routine experimentation based upon the composition, thickness and nature of the vinyl polymer used for the racket frame.

Claim 15

The discussion of Cousin et al., Kaspe and McLeod as applied to claim 14 above applies herein.

Although Cousin et al. in view of McLeod teach that the elongate element can be heated by a bath of desired temperature, Cousin et al. in view of McLeod do not specifically teach that the bath may be a glycol bath. Kaspe further teach that heating in a glycol bath or other baths such as oil baths have been suitable for heating the end portion of the pipe (said extrusion is heated to said first temperature in a glycol bath). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use a glycol bath in the process of Cousin et al. in view of McLeod instead of the silicone oil bath as taught by Kaspe to provide a cheaper and more efficient heating medium for the bath in the process of Cousin et al. in view of McLeod.

Claim 21

Cousin et al. teach a method of forming a racket frame including forming an elongate element (a preformed thermoplastic polymer extrusion; providing said preformed thermoplastic polymer extrusion) by extruding a mixture of a thermoplastic material and carbon fibers; allowing the elongate element to cool and solidify; introducing (filling) a polyurethane foam (polymer foam; polyisocyanate-based; polyurethane foam; said polyurethane foam is rigid closed-cell foam, semi-rigid closed-cell/open-cell foam or flexible open-cell foam; a support foam formed within said cavity) into cavities (at least one cavity) in the elongate element; heating the elongate element with the polyurethane foam therein to its softening temperature (a first temperature; said first temperature is the heat deflection temperature of the preformed polymer extrusion) by immersing the elongate element in a thermostat-controlled bath for example of

silicone oil; bending the softened elongate element (said heated extrusion) as it is internally supported to prevent crushing by the polyurethane foam around a core (on a curved mandrill) to form a racket frame; and cooling the racket frame (extrusion) below its softening temperature (a second temperature) to set it into the shape of the racket frame (a curved polymer extrusion) (abstract; column 3, line 65 - column 4, line 2; column 4, line 42 - column 5, line 2; column 5, lines 63-66). Note that, although Cousin et al. do not specifically teach that the polymer foam is cured within the cavities, one of ordinary skill in the art would have obviously recognized that the urethane foam must obviously be cured to be capable of supporting the elongate element to prevent crushing. Note further that, although Cousin et al. do not specifically teach that the racket frame is removed from the core after cooling, one of ordinary skill in the art would have obviously recognized that the racket frame must obviously be removed from the core to allow the formed racket to serve its intended purpose.

Cousin et al. do not specifically teach that the thermoplastic material may include a vinyl polymer. However, McLeod teaches a method of manufacturing a racket frame including molding a racket frame out of a fiber reinforced thermoplastic resin material including long fibers and a flowable thermoplastic matrix material such as polyvinyl chloride (vinyl polymer) (column 4, line 36-50). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use polyvinyl chloride as the thermoplastic matrix material for the carbon fibers in the process of Cousin et al. as taught by McLeod to provide a racket frame made from a low-cost yet strong material as taught by McLeod.

Cousin et al. do not specifically teach that the polyurethane foam has a density of about 16 kg per cubic meter to about 320 kg per cubic meter. However, Cousin et al. further teach the cavities are filled with a polyurethane foam whose density is chosen in dependence on the final weight the racket is to have (column 3, line 65 - column 4, line 2). Particularly, the density of the foam is manipulated to achieve the target weight and desired characteristics (see col. 6, lines 10-19). The examiner does not find any limitation to only having 0.9 (specific gravity) density; therefore the density of the racket is not limited to any particular example. Assuming arguendo that 0.9 is the target average density (as cited by Cousin et al., col. 3, lines 61-65), and that the non-foam portion of the racket frame is made of vinyl polymers with 1.4 specific gravity ((*Plastics Materials*, page 74), then the foam would necessarily have significantly less than the target average density (significantly less than 0.9 specific gravity = 900 kg/m^3) in order for the frame to attain the target average density. As the space provided for the foam is variable based on space occupied by the polymer frame of the racket, then instances where a majority of the frame is occupied by non-foam polymer would require that the foam dramatically lower its density (significantly less than 0.9 specific gravity = 900 kg/m^3) in order to achieve the target average density. Given this interaction of the variables and Cousin's teachings of density manipulation for the foam, one of ordinary skill in the art would have liberal latitude to optimize the foam density. Since Cousin et al. recognize that the density of the foam is chosen based upon the desired weight of the racket, Cousin et al. recognize that the density of the foam is a result-effective. As such, one of ordinary skill in the art would have obviously determined the optimum

density of the foam in the process of Cousin et al. through routine experimentation based upon the desired final weight of the racket, the racket construction, density, etc.

Cousin et al. do not specifically teach that the second temperature is at least about 10 degrees Celsius less than the heat deflection temperature (e.g., the softening temperature) of the elongate element. However, Kaspe teaches a method for forming a single flange pipe adapter including softening the end portion of a resin pipe, bending the outer extremities of the heated end portion to cause the heated end portion to be flared outwardly, and cooling the outwardly flared end portion to set it in its final configuration wherein the temperature and the timing of the heating and cooling vary depending on the nature and/or thickness of the thermoplastic resin used (column 1, line 47 - column 2, line 2; column 3, lines 33-39 and 48-61). Although Kaspe does not teach the specifically claimed cooling temperature, Kaspe obviously recognizes that the temperature and the timing of heating and cooling are result-effective variable based upon the nature of the thermoplastic resin used in bending processes for thermoplastic materials. As such, in view of the teachings of Kaspe, one of ordinary skill in the art would have obviously determined the optimum temperature and timing of heating and cooling in the process of Cousin et al. in view of McLeod through routine experimentation based upon the composition, thickness and nature of the thermoplastic material used for the racket frame.

Claim 22

The discussion of Cousin et al., Kaspe and McLeod as applied to claim 21 above applies herein.

With respect to Claim 22, Cousin teaches that the foam prevents crushing of the elongate element (comprises selecting ingredients of said support foam to substantially stabilize said extrusion) (see col. 4, lines 1-7). Moreover, having selected the proper ingredients for the foam to have the ability to substantially stabilize said elongate element is inherent in Cousin principally because Cousin's elongate element prevents crushing, which is substantially stabilizing for the element.

Claim 23

The discussion of Cousin et al., Kaspe and McLeod as applied to claim 21 above applies herein.

With respect to Claim 23, Cousin teaches that the elongate element is heated within a liquid (see Fig. 7) before bending (see Fig. 8). Given that the middle of the structure has surface area on four sides, its heat dissipation within the air after removal from the liquid would necessarily be less than the ends of the structure, which have the same surface area on four sides plus the surface area of end of the elongate element. With the heat dissipation greater at the ends than in the middle, the middle would have a temperature gradient such that the middle would be warmer than the ends, particularly during the initial portions of bending the elongate element. Since the elongate element is taught to be bent in a fashion shown in Figure 8, the greatest flex would be the middle of the elongate element, which translates into the middle undergoing greater stress. Thus the limitations of the heating generating a temperature gradient which is warmer in the middle and warmer where greatest stress occurs.

Claim 24

The discussion of Cousin et al., Kaspe and McLeod as applied to claim 21 above applies herein.

With respect to Claim 24, Cousin teaches that the elongate element is bent into an arch shape (see shape of top of structure in Fig. 8).

Claim 25

The discussion of Cousin et al., Kaspe and McLeod as applied to claim 21 above applies herein.

With respect to Claim 25, as previously stated, The suggested use of the method to make a window frame as mentioned in the preamble is treated as an intended used only as there are no steps in the method similar installing glass. Therefore, the recitation "window frame" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Therefore, as the examiner finds no teachings within the references indicating the frame failing to be able to be used as to frame windows, much less merely as a component within a larger overall assembly in which the frame would be a part of.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,643,857 (Cousin et al.) in view of U.S. Patent No. 5,922,255 (McLeod) and U.S. Patent No. 5,164,419 (Bartlett et al.).

Claim 12

The discussion of Cousin et al. and McLeod as applied to claim 1 above applies herein.

Although Cousin et al. in view of McLeod teach filling the cavities by injection of a polyurethane foam from a mixing head, Cousin et al. in view of McLeod do not specifically teach that the polyurethane foam comprises polyisocyanate, at least one active hydrogen-containing compound, and a blowing agent. However, Bartlett et al. teach that it is well known to prepare polyurethane foams by reacting organic polyisocyanate with an active hydrogen-containing compound in the presence of a blowing agent or agents (a plurality of ingredients comprising polyisocyanate, at least one active hydrogen-containing compound and a blowing agent) (column 2, lines 30-46). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use the well known process of preparing a polyurethane foam in the process of Cousin et al. in view of McLeod as taught by Bartlett et al. to provide a reliable and readily available method of forming the polyurethane foam in the process of Cousin et al. in view of McLeod.

Response to Arguments

Applicant's arguments filed 05 April 2006 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC 103 rejections. Applicant's arguments appear to be on the grounds that:

1) All claim elements have not been shown, specifically the density of 16-320 kg/m^3 and less than 320 kg/m^3. No reference teaches this density. The cited references must expressly disclose the values. It has not been demonstrated that the desired weight of the racquet would be achieved with the claimed density.

2) The dependent claims are allowable because the independent claims are allowable and because Claim 6 recites the second temperature is at least about 10 degrees Celsius less than the heat deflection temperature of the preformed polymer extrusion.

3) Cousin and McLeod teach away from one another because cousin teaches engineering performance polymers yet McLeod utilizes recycled low-cost materials, directly conflicting.

The Applicant's arguments are addressed as follows:

1) As described in the 103 rejection above, the density is optimized as taught by Cousin to obtain the desired total density. This optimization achieves the claimed density. Thus, the element of claimed density is taught and established for a prima facie case of obviousness.

2) As described in the 103 rejection above, Kaspe obviously recognizes the second temperature is optimized (along with timing of heating and cooling) are result-

effective variable based upon the nature of the thermoplastic resin used in bending processes for thermoplastic materials. This optimization would achieve the claimed second temperature. Thus, the element of the claimed second temperature is taught and established for a prima facie case of obviousness.

3) McLeod certainly utilizes thermoplastics that are engineered to perform the frame function. This may be seen principally by McLeod's use of PVC for a frame because it is determined to be robust for repeated use and achieves satisfactory static and dynamic impact performance (see col. 4, lines 48-50 and col. 1, lines 32-36). This may be seen as McLeod teaching additional suitable materials to make frames.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m. - 5 p.m. and alternating Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PB

Patrick Butler
Assistant Examiner
Art Unit 1732

CHRISTINA JOHNSON
PRIMARY EXAMINER
5/24/06